PRO-SET®

LAMINATING EPOXY

ADHESIVES

PROCESS EQUIPMENT

Technical Data

M1002 Resin/226 Hardener

Toughened Laminating Epoxy

The M1002/226 laminating epoxy system is formulated for high load or high peel applications and situations where the bondline area is less than optimum. Examples are carbon fiber skins on honeycomb core material or taping with carbon onto carbon skinned panels or structures. The 226 Hardener provides approximately 1.5-2 hrs. of open time at 72° F.

MIXING

Combine the M1002 Resin with PRO-SET 226 Hardener following the ratios by weight or volume shown in the table. Stir the mixture thoroughly and transfer to impregnator, roller pan, or apply directly to the laminate surface.

CURING

The M1002/226 mixtures maintain excellent working properties until gel takes place. The mixture will temper and continue to cure over the next several days at room temperature, and after two weeks will reach an acceptable degree of cure for many applications. Elevated temperature post cure will increase the degree of cure and improve the mechanical and thermal properties.

We recommend building sample panels using proposed materials and manufacturing processes to confirm working and curing characteristics under your shop conditions.

HANDLING CHARACTERISTICS ***(Not for specification purposes)***

Property	**Mixed**
Density	9.8 lb/gal
Viscosity @ 72° F (ASTM D-2393-86)	2,200 cps

Mix Ratio (M1002:226)	**Target**	**Acceptable Range**
by weight	100:23	100:24.6 – 100:20.9
by volume	100:27	100:28.9– 100:24.6
Pot Life (ASTM D-2471-71)	100g	
@ 72° F	28 minutes	

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TOUGHENED LAMINATING EPOXY—PHYSICAL PROPERTIES

M1002 Resin/226 Hardener

Physical Property	Test Method	Cure Schedule	
		Room Temp. x 2 weeks	RT x 15 hr + 140°F x 8 hr
Hardness (Shore D)	ASTM D-2240	82	83
Compression Yield (psi)	ASTM D-695	13,797	14,587
Tensile Strength (psi)	ASTM D-638	7,159	9,583
Tensile Elongation (%)	ASTM D-638	2.0	3.4
Tensile Modulus (psi)	ASTM D-638	4.86E+05	4.59E+05
Flexural Strength (psi)	ASTM D-790	12,539	18,340
Flexural Modulus (psi)	ASTM D-790	4.72E+05	5.96E+05
Onset of Tg by DSC (°F) **		128	161
Ultimate Tg by DSC (°F) **		172	172
Heat Deflection Temperature (HDT) (°F)	ASTM D-648	125	159
Izod Impact, notched (Ft-lb/in)	ASTM D-256	0.51	0.53

Test Specimens were neat epoxy (without fiber reinforcement)
** Determined using a Differential Scanning Calorimeter (DSC). Value reported is the onset of the glass transition
Typical Values; not to be construed as specification

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